

ATTORNEY DOCKET NO. P21-US

IN THE CLAIMS:

Please amend claims 1, 24, 55, and 64 as follows; and

Please add new claims 71 to 81 as follows:

1. (Currently Amended) A micromechanical device, comprising:
a movable portion and a flexible portion composed of, the flexible portion comprising a
nitride compound and a late transition metal, wherein the nitride compound and late transition
metal are in the same film or layer and wherein the film or layer is a ternary or higher system
deposited by chemical or physical vapor deposition; and wherein the movable portion is operable
to be actuated by an electrostatic force derived from an electrostatic field established between the
movable portion and an electrode.
2. (original) The micromechanical device of claim 1, wherein the nitride compound is a nitride
of silicon, boron or aluminum.
3. (original) The micromechanical device of claim 2, wherein the nitride compound is a silicon
nitride or boron nitride.
4. (original) The micromechanical device of claim 1, wherein the late transition metal is
selected from the groups 8B or 1B of the periodic table.
5. (original) The micromechanical device of claim 1, wherein the late transition metal is a
ferromagnetic metal.
6. (original) The micromechanical device of claim 1, which is a MEMS sensor or actuator.
7. (original) The micromechanical device of claim 1, wherein the late transition metal is a noble
metal.
8. (original) The micromechanical device of claim 1, wherein the late transition metal is Co, Ni,
Pd, Pt, Ag or Au.

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9. (previously presented) The micromechanical device of claim 1, wherein the nitride comprises less than 0.1% oxygen.
10. (previously presented) The micromechanical device of claim 1, wherein the nitride is an oxynitride that comprises up to 10% oxygen.
11. (original) The micromechanical device of claim 1, wherein at least a flexible portion comprises the nitride compound and the late transition metal.
12. (original) The micromechanical device of claim 1, comprising a substrate, a movable element formed in or on the substrate and a hinge for allowing movement of the movable element relative to the substrate.
13. (original) The micromechanical device of claim 12, wherein the substrate is a semiconductor or light transmissive substrate.
14. (original) The micromechanical device of claim 12, wherein the movable element and/or the hinge are formed of the nitride compound and the late transition metal.
15. (original) The micromechanical device of claim 14, further comprising posts or walls for connecting the movable element to the substrate via the hinge.
16. (original) The micromechanical device of claim 12, wherein the hinge is a sputtered hinge.
17. (original) The micromechanical device of claim 12, wherein the device is a micromirror device with said movable element having a reflective layer thereon or therein.
18. (original) The micromechanical device of claim 12, which is a sensor.
19. (original) The micromechanical device of claim 17, wherein the reflective layer comprises

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Al, Ti or Au.

20. (original) The micromechanical device of claim 17, wherein the micromirror device is a light beam steering device.

21. (previously presented) The micromechanical device of claim 20, wherein the light beam steering device is within an optical switch.

22. (original) The micromechanical device of claim 17, wherein the micromirror device is part of a micromirror array in a display.

23. (original) The micromechanical device of claim 22, wherein the display is a direct view or projection display.

24. (currently amended) A micromechanical device selected from a micromirror, a MEMS switch and a MEMS sensor, comprising:

a movable portion and a flexible portion, wherein at least one of the movable portion and flexible portion comprise a ceramic compound and a late transition metal, wherein the ceramic compound and late transition metal are in the same film or layer and wherein the film or layer is a ternary or higher system deposited by chemical or physical vapor deposition; and wherein the movable portion is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

25 – 54 (cancelled)

55. (Currently Amended) A micromechanical device; comprising:

a movable portion that is capable of movement due to a flexible portion that comprises ~~comprising~~ a late transition metal and an element from groups 3A to 6A of the periodic table and with the flexible portion being formed by chemical or physical vapor deposition, wherein the late transition metal and the element from groups 3A to 6A of the periodic table are in the same film or layer and wherein the film or layer is a ternary or higher system deposited by chemical or

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physical vapor deposition; and wherein the movable portion is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

56. (original) The micromechanical device of claim 55, wherein the late transition metal is selected from groups 8B or 1B of the periodic table.

57. (original) The micromechanical device of claim 55, further comprising an element from groups 3A to 6A of the periodic table.

58. (original) The micromechanical device of claim 57, comprising more than one element from groups 3A to 6A.

59. (original) The micromechanical device of claim 58, comprising two or more elements from the first two rows of groups 3A to 6A.

60. (original) The micromechanical device of claim 59, wherein one of the two or more elements is nitrogen.

61. (original) The micromechanical device of claim 60, wherein another of the two or more elements is aluminum, boron, silicon carbon or oxygen.

62. (original) The micromechanical device of claim 61, wherein the late transition metal is a ferromagnetic metal.

63. (previously presented) The micromechanical device of claim 55, wherein the late transition metal is a noble metal.

64. (Currently Amended) A micromechanical device, comprising:

that is capable of movement due to a movable portion and a flexible portion, and at least one of which comprises a ceramic compound and a late transition metal, wherein the ceramic

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compound and late transition metal are a ternary or higher system within a common layer; and wherein the movable portion is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

65. (original) The micromechanical device of claim 64, wherein the ceramic compound is a nitride and/or oxide compound, and the late transition metal is selected from either of groups 8B or 1B in the periodic table.

66. (original) The micromechanical device of claim 65, wherein the device comprises in at least one element from groups 8B or 1B and two or more elements from the first two rows of groups 3A to 6A of the periodic table.

67-70 (cancelled)

71. (new) A micromechanical device, comprising:

a flexible hinge comprising a nitride compound and a late transition metal, wherein the nitride compound and late transition metal are in the same film or layer and wherein the film or layer is a ternary or higher system deposited by chemical or physical vapor deposition

72. (new) The micromechanical device of claim 71, wherein the flexible hinge is attached to a movable portion that is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

73. (new) A micromechanical device selected from a micromirror, a MEMS switch and a MEMS sensor, comprising:

a movable portion and a flexible hinge to which the movable portion is attached such that the movable portion is operable to move, wherein the flexible hinge comprise a ceramic compound and a late transition metal, wherein the ceramic compound and late transition metal are in the same film or layer and wherein the film or layer is a ternary or higher system deposited by chemical or physical vapor deposition.

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74. (new) The micromechanical device of claim 73, wherein the flexible hinge is attached to a movable portion that is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

75. (new) A micromechanical device, comprising:

a movable portion that is capable of movement due to a flexible hinge that comprises a late transition metal and an element from groups 3A to 6A of the periodic table and with the flexible hinge being formed by chemical or physical vapor deposition, wherein the late transition metal and the element from groups 3A to 6A of the periodic table are in the same film or layer and wherein the film or layer is a ternary or higher system deposited by chemical or physical vapor deposition.

76. (new) The micromechanical device of claim 75, wherein the flexible hinge is attached to a movable portion that is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

77. (new) A micromechanical device, comprising:

a movable portion and a flexible hinge to which the movable portion is attached such that the movable portion is operable to move, and wherein the flexible hinge comprises a ceramic compound and a late transition metal, wherein the ceramic compound and late transition metal are a ternary or higher system within a common layer.

78. (new) The micromechanical device of claim 77, wherein the flexible hinge is attached to a movable portion that is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

79. (new) A micromechanical device, comprising:

a flexible portion comprising a nitride compound having an element from groups 3A to 6A of the periodic table and a late transition metal, wherein the nitride compound and late transition metal are in the same film or layer and wherein the film or layer is a ternary or higher system deposited by chemical or physical vapor deposition

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80. (new) The micromechanical device of claim 79, wherein the flexible portion is a flexible hinge that is operable to be actuated by an electrostatic force derived from an electrostatic field established between the movable portion and an electrode.

81. (new) The micromechanical device of claim 79, wherein the nitride compound is silicon nitride.